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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,665	05/14/2001	Mordechai Segal	TI-30245	1323
23494	7590	08/05/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			LUGO, DAVID B	
P O BOX 655474, M/S 3999			ART UNIT	
DALLAS, TX 75265			PAPER NUMBER	

2637

DATE MAILED: 08/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/674,665	Applicant(s) SEGAL ET AL.	
	Examiner David B. Lugo	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/2/02, 11/18/02</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-15 and 17-19, drawn to communication systems and methods for encoding an input data stream, filtering the encoded signal to reduce adjacent channel interference, and modulating the filtered signal for transmission via a cable television transmission medium.

Group II, claim(s) 16, drawn to an analog front end comprising a plurality of band pass filters, a multiplexer for selecting one of the outputs from the band pass filters, and providing a digitized multiplexer output signal to a digital receiver.

Group III, claim(s) 23-30, drawn to a communication arrangement and method for reproducing a symbol or FEC block represented by a segment of an input data stream N times, transmitting each reproduced symbol or FEC block using a distinct transmission channel, and performing soft combining of signals received from the transmission channels.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I has the special technical feature of filtering an encoded signal to reduce adjacent channel interference, which is not shared by any of the remaining groups. Group II has the special technical feature of an analog front end having a plurality of band pass filters, each centered around a different frequency, and a multiplexer for selecting one of the band pass filter output signals, which is not shared by any of the remaining groups. Group III has the special technical feature of reproducing a symbol or FEC block represented by a segment of an input data stream N times, transmitting each reproduced symbol or FEC block using a distinct transmission channel, and performing soft combining of signals received from the transmission channels, which is not shared by any of the remaining groups.

Art Unit: 2637

2. During a telephone conversation with Abdul Zindani on 7/28/04 a provisional election was made without traverse to prosecute the invention of Group III, claims 23-30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: 402 (p. 7, line 12), 419 (p. 12, line 21). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 807 (Fig. 8). Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application.

6. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page

Art Unit: 2637

header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures.

If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities:

Page 12, line 21, "estimate 902" should be --estimate 907--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 23-25 and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Anders Nyström et al. U.S. Patent 6,189,123.

10. Regarding claims 23 and 27, Anders Nyström et al. teach a system in Figure 1 for communicating a block of digital information between a sending station 12 and a receiving station 14, comprising a channel encoder 26, coupled to an input stream for reproducing a symbol N times (see Fig. 3), a transmission arrangement including modulator 28 configured to use the plurality of outputs to transmit the reproduced symbols using distinct transmission channels (col. 7, lines 25-29), and a receiver 14 for

Art Unit: 2637

soft combining the signals to produce an estimate of the symbol, as described in col. 11, line 26 to col. 13, line 31.

11. Regarding claims 24 and 28, the soft combining includes selective combining, as the decoders alternately decode first and second received versions of the block of symbols, respectively (col. 12, lines 10-12).

12. Regarding claims 25 and 29, Anders Nyström et al. state that redundant transmission of additional transmission sets can be performed as necessary (col. 7, lines 63-67).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anders Nyström et al. in view of Alamouti et al. U.S. Patent 6,185,258.

15. Regarding claims 26 and 30, Anders Nyström et al. disclose a communication system, as described above, but do not expressly disclose that information bits using a delay-encoded mapping scheme are transmitted.

16. Alamouti et al. disclose an encoding scheme where information symbols are delayed and transmitted (see Table 1) to achieve time diversity.

17. It would have been obvious to one of ordinary skill in the art to employ the encoding scheme of Alamouti et al. in the communication system of Anders Nyström et al. to provide diversity gain.

Art Unit: 2637

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(703) 305-0954**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jay Patel**, can be reached at **(703) 308-7728**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dl
8/2/04


KHAI TRAN
PRIMARY EXAMINER 8/3/04